

## Analytical Method Validation of (-)Epicatechin gallate in *Penthorum chinense* Pursh Extract using HPLC

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### ABSTRACT

This study attempted to establish a High Performance Liquid Chromatography (HPLC) analysis method for the determination of (-)-epicatechin gallate as a part of the quality control for the development of functional cosmetic materials from *Penthorum chinense* Pursh extracts. HPLC was performed on a Unison US-C18 column (4.6 × 250 mm, 5 μ m) with a gradient elution of 0.05% (v/v) trifluoroacetic acid (TFA) and methyl alcohol at a flow rate of 1.0 mL/min at 30 °C. The analyte was detected at 280 nm. The HPLC method was performed in accordance with the International Conference on Harmonization (ICH) guideline (version 4, 2005) of analytical procedures with respect to specificity, precision, accuracy, and linearity. The limits of detection and quantitation were 0.11 and 0.33 mg/mL, respectively. Calibration curves showed good linearity ( $r^2 > 0.9999$ ), and the precision of analysis was satisfied (less than 0.6%). Recoveries of quantified compounds ranged from 99.51 to 101.92%. This result indicates that the established HPLC method is very useful for the determination of marker compound in *P. chinense* Pursh extracts.

**Keywords:** (-)-epicatechin gallate, Functional cosmetic, HPLC, *Penthorum chinense* Pursh, Validation

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